

Ada and Indexing

Ada the Ladybug has many things to do and almost no time. She wants to save time while searching for something so she has decided to make a search engine.

She has many words in her TODO list. It costs her precious time to find out, whether a word is in it so she seeks your help. You will get list and some queries. You will be asked, to find out how many words in TODO list have a word as [prefix](#).

Input

The first line contains **N, Q**: the number words in TODO list and number of queries.

N lines follow, with words (of TODO list) consisting of lowercase letters. The sum of their lengths won't be greater than 10^6

Q lines follow, with words (queries) consisting of lowercase letters. The sum of their lengths won't be greater than 10^6

Output

For each query print the number of words in TODO list which have actual word as prefix.

Example Input

```
12 6
bulldog
dog
dogged
doggedly
doggerel
dogma
dogmatic
dogmatism
dogs
catastroph
catastroph
doctor
cat
dog
dogg
do
doctrinography
dogge
```

Example Output

```
2
8
3
9
0
3
```

